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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,425	03/30/2004	Eric C. Samson	42P18586	5702

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EXAMINER	
BAE, JI H	

ART UNIT	PAPER NUMBER
2115	

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/814,425	SAMSON, ERIC C.	
	Examiner	Art Unit	
	Ji H. Bae	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6-10-05, 10-24-05, 1-17-06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7, 10-13, and 15-24, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the performance" in line 5 and 6 and "the time between completion" in line 9.

Claims 2 and 3 recite the limitations "the frequency of a processor clock" and "said time" in line 2 of each claim.

Claim 5 recites the limitations "the amount of time" in lines 1 and 2.

Claim 6 recites the limitation "the completion of the second task" in line 3.

Claims 10 and 12 recite the limitations "the time between" in lines 1 and 2.

Claims 11 and 13 recite the limitation "the time needed" in line 2.

Claim 15 recites the limitation "the frequency of a clock" in lines 2 and 3.

Claim 16 recites the limitation "the time between" in lines 2 and 3.

Claim 17 recites the limitations "the time taken" in lines 2 and 4, and "the mathematical models" in line 3.

Claim 18 recites the limitation "the identification of the models" in line 5.

Claim 19 recites the limitation "the specified operating point" in line 1.

Claim 21 recites the limitation "the workload" lines 5 and 6 and "the requested requirement" in line 6.

Claim 22 recites "the requested operating point" in line 2 and "the frequency of an operating clock" in lines 2 and 3.

There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 21-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 21-24 recite a machine-readable medium. Applicant's specification teaches that a machine-readable medium may be comprised of "electrical, optical, acoustical or other form of propagated signals (e.g. carrier waves, infrared signals, etc.)" [page 12, paragraph 34]. Propagated signals as taught by applicant are not tangible, and do not fall within one of the statutory categories for invention. Therefore, the claims are non-statutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8, 9, 12, 13, 21, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin et al., U.S. Patent Application Publication No. 2003/0233592 A1.

Regarding claim 8, Lin teaches a method comprising:

providing a processor with a workload that has a real-time demand [desired frame rate, paragraph 24 and 25]; and

setting a processor clock frequency requirement for the processor based on a deadline margin for the real-time demand [paragraphs 29 and 30, Fig. 4 and 6].

Regarding claim 9, Lin teaches the that real-time demand is a target frame rate.

Regarding claims 12 and 13, Lin teaches that the margin comprises a measurement of the time between completion of rendering an image and a start of display, and an estimate of the time needed to render and the target frame rate [paragraph 10, 30].

Regarding claim 21, Lin teaches an article of manufacture with machine-readable medium that requests an operating point requirement for a target processor to reduce power consumption by the target processor while the target processor performs the workload and meet a plurality of completion deadlines for a plurality of tasks in the workload, wherein the requested requirements is based on an elapsed time between completion of a task and its deadline [paragraphs 29 and 30].

Regarding claim 22, the requested operating point requirement is a decrease in the frequency of an operating clock [paragraph 30].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deering, U.S. Patent No. 6,313,838 B1, in view of Lin

Regarding claim 1, Deering teaches:

providing a first processor of the system with a first task to perform [host CPU, Fig. 4];

providing a second processor of the system with a second task to perform, wherein performance of the second task will use a result of the first task [graphics accelerator/system, Fig. 4].

Deering does not teach requesting an adjustment to an operating point of one of the first and second processors.

Lin teaches:

requesting an adjustment to an operating point of a graphics processor to better manage power consumption in the electronic system, based on the time between completion of a task and its deadline [paragraph 12, 14, 29, and 30].

It would have been obvious to one of ordinary skill in the art to combine the teachings of Lin with Deering by implementing the clock scaling techniques of Lin in the system of Deering. Both Lin and Deering are directed towards graphics processors with real-time demands – specifically, rendering image frames at a desired frame rate. The teachings of Lin would improve the system of Deering by allowing Deering to operate at a desired frame rate, while at the same time preventing the unnecessary consumption of power [paragraphs 9-11].

Regarding claims 2 and 3, Lin teaches decreasing or increasing the clock frequency, depending on if the deadline was met [paragraph 30].

Regarding claim 4, Lin and Deering teach that the tasks related to describing and rendering images at a desired frame rate.

Regarding claim 5, Lin teaches measuring the amount of time needed for the graphics processor to render a frame. Additionally, it would have been obvious to one of ordinary skill in the art to measure any other time period that would contribute to the graphics processor meeting its targeted frame rate.

Regarding claims 10 and 11, Deering teaches measuring the rendering time by measuring, for each polygon in the frame, a time to set up the rendering, and an actual rendering time [col. 3, lines 61-67, col. 4, lines 30-32].

Regarding claims 14-24, the combination of Lin and Deering teaches the method of claims 1-13. Lin and Deering also teach the system and article of manufacture to implement the claimed method.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Jones, Jr., U.S. Patent No. 5,781,768;

Ebihara, U.S. Patent Application Publication No. 2002/0130870 A1;

Culbert et al., U.S. Patent No. 6,820,209 B1;

Atkinson, U.S. Patent No. 6,691,236 B1;

Torii et al., U.S. Patent No. 6,950,106 B2;

Cui et al., U.S. Patent Application Publication No. 2003/0210247 A1;

Giemborek et al., U.S. Patent No. 6,950,105 B2;

Sinclair et al., U.S. Patent No. 6,657,634 B1;

Miyagawa, U.S. Patent No. 6,758,752 B1;

Khodorkovsky, U.S. Patent Application Publication No. 2005/0195181 A1;

Williams et al., U.S. Patent No. 6,397,343 B1;

Alben et al., U.S. Patent No. 6,938,176 B1;

Nicol et al., U.S. Patent No. 6,141,762.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ji H. Bae whose telephone number is 571-272-7181. The examiner can normally be reached on Monday-Friday, 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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